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Ferchat et al.

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[45] **Date of Patent: Dec. 21, 1999**

[54] **SUPPORT ASSEMBLY FOR ATTACHING A SIGN**

[75] Inventors: **Craig S. Ferchat**, Mississauga; **Johann Andre Van Der Linde**, Kitchener; **Martin Cross**; **Adrian W. Pynenburg**, both of Brantford, all of Canada

[73] Assignee: **Storeimage Programs Inc.**, Brantford, Canada

[21] Appl. No.: **09/156,746**

[22] Filed: **Sep. 17, 1998**

[51] **Int. Cl.**[6] **A47F 5/00**

[52] **U.S. Cl.** **211/189**; 211/186; 40/601

[58] **Field of Search** 211/189, 191, 211/190, 186, 187, 104; 40/601; 108/108, 109

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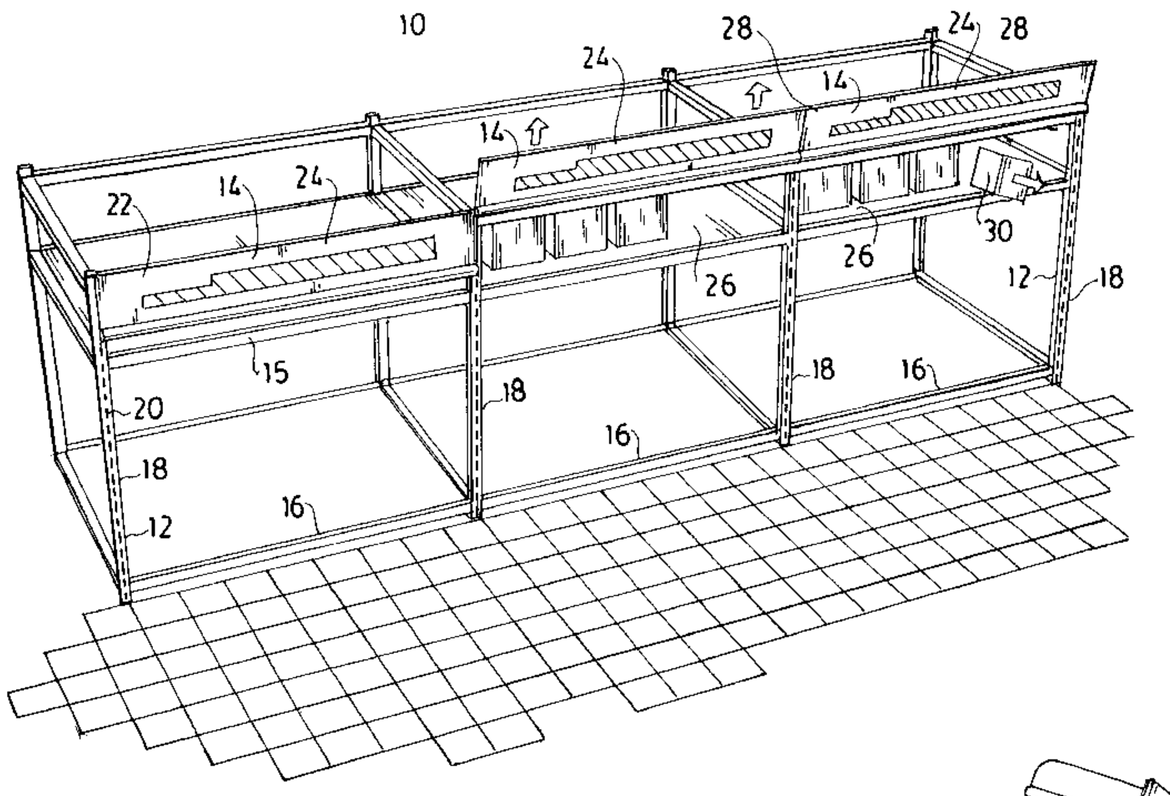
Primary Examiner—Robert W. Gibson, Jr.

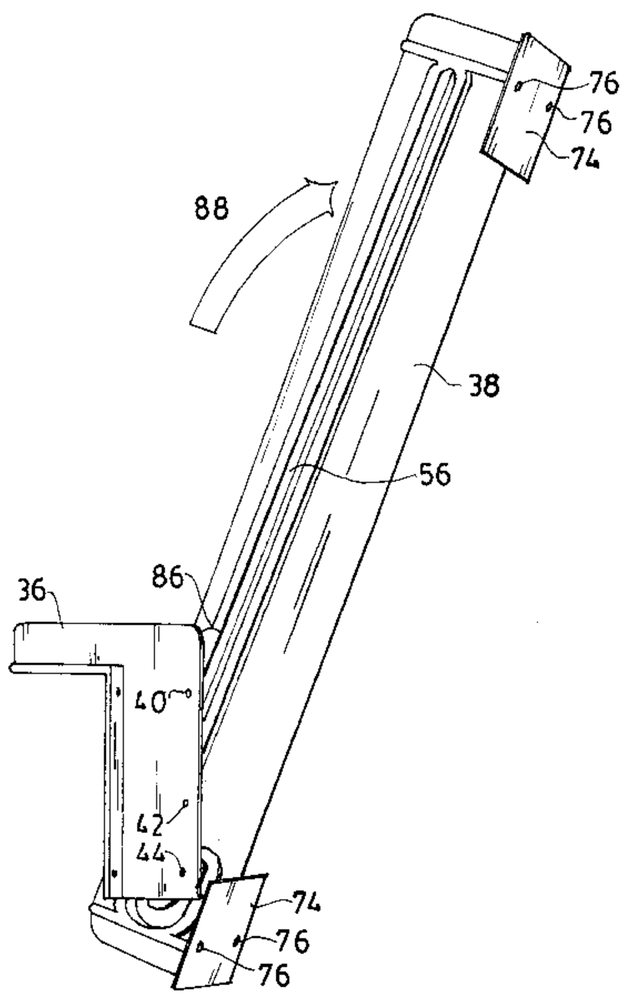
Attorney, Agent, or Firm—Howard J. Greenwald

[57] **ABSTRACT**

A support assembly for attaching a sign to a pallet rack which contains a bracket and a support body slidably connected to the bracket. The bracket may be fixed in place upon a pallet rack, and the support body may be raised with respect to the fixed bracket, lowered with respect to the fixed bracket, or tiltably locked in place with respect to the fixed bracket.

19 Claims, 10 Drawing Sheets





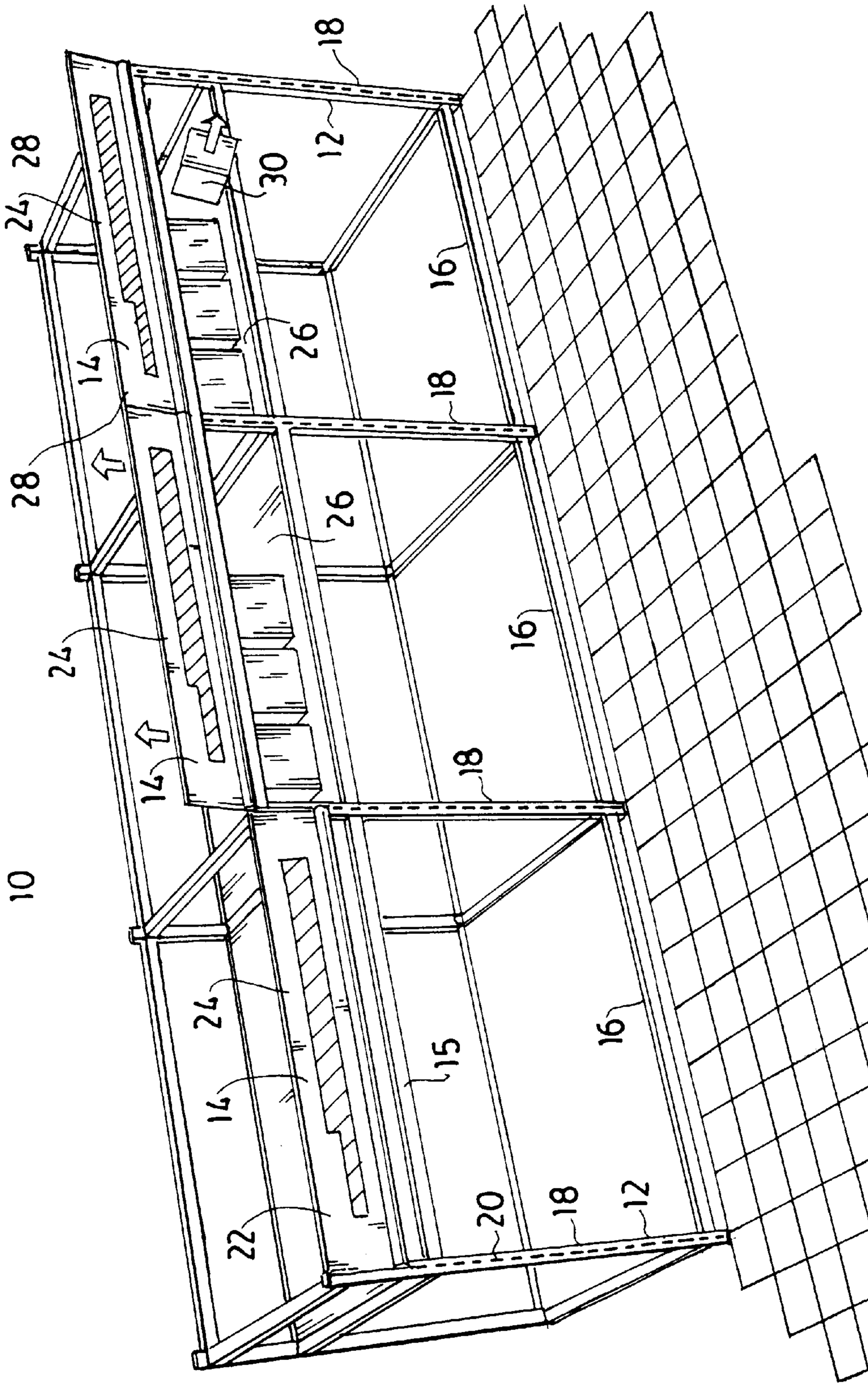


FIG. 1

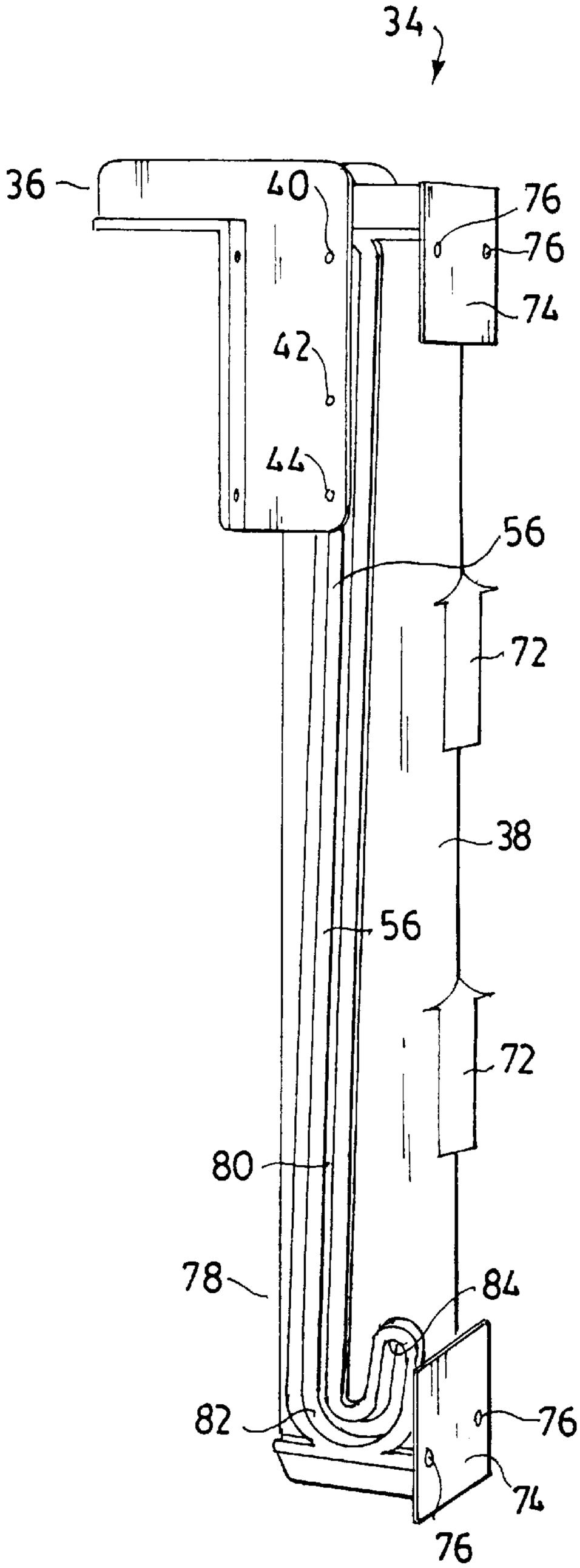
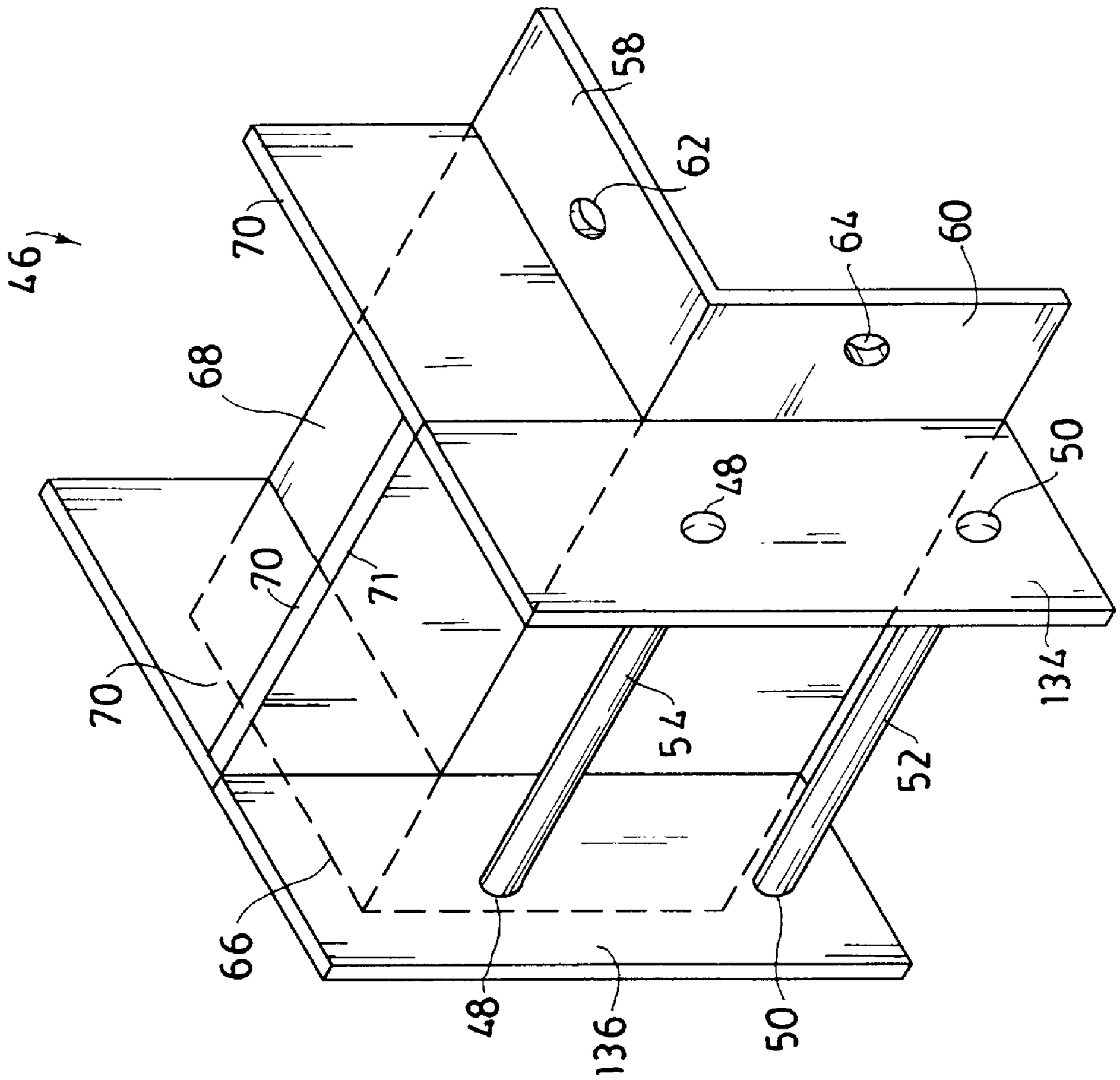


FIG. 2

FIG. 3



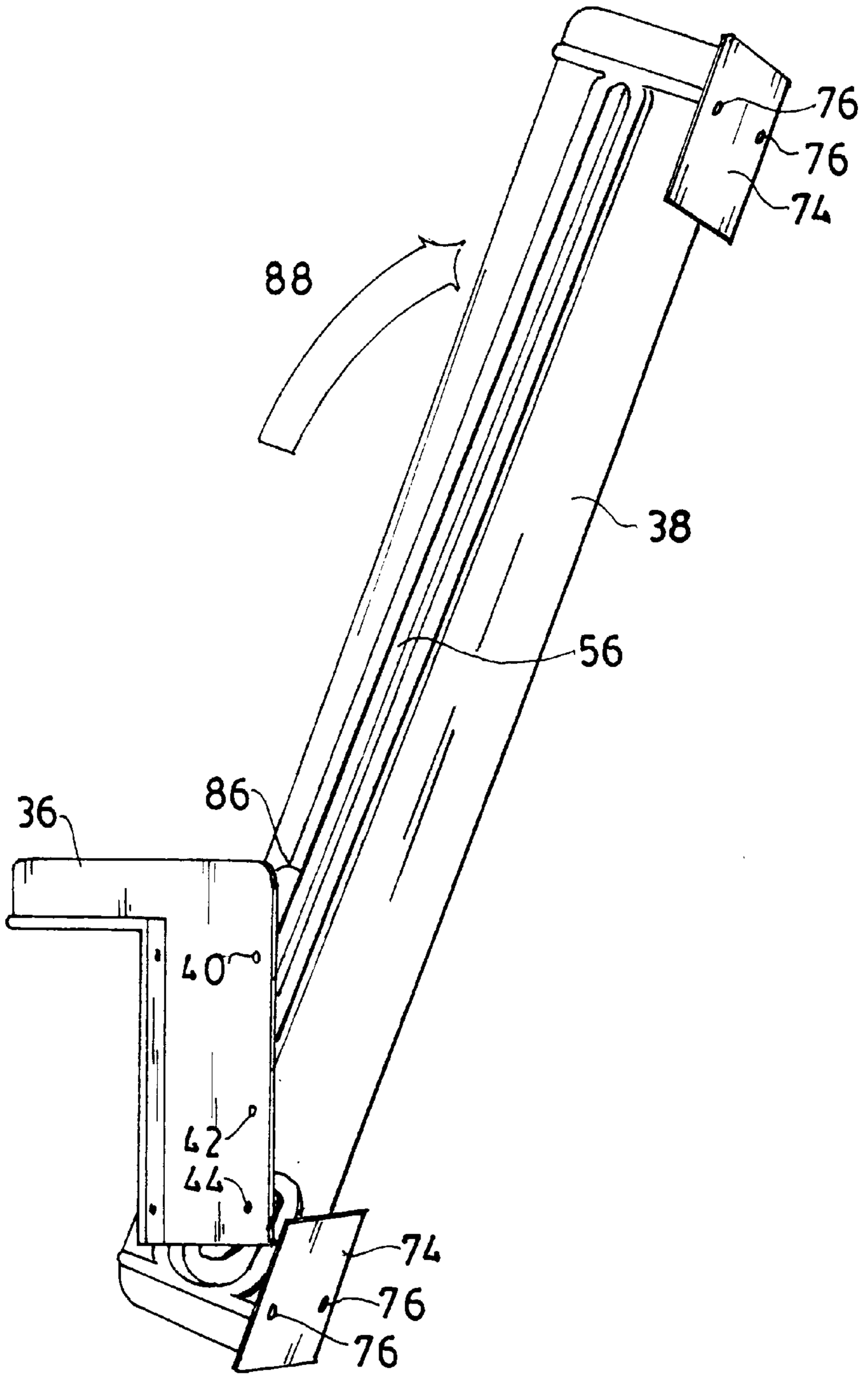


FIG. 4

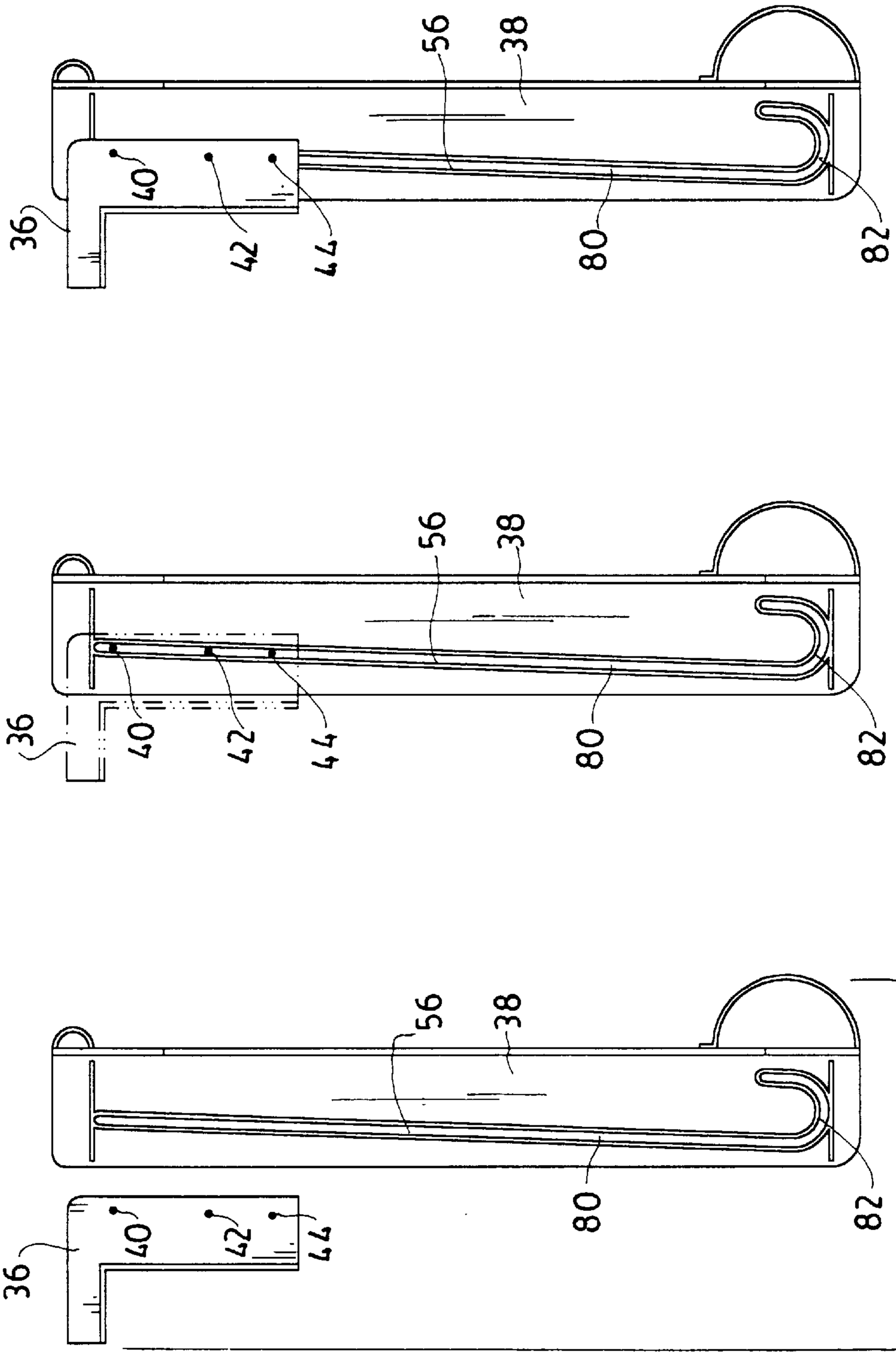


FIG. 7

FIG. 6

FIG. 5

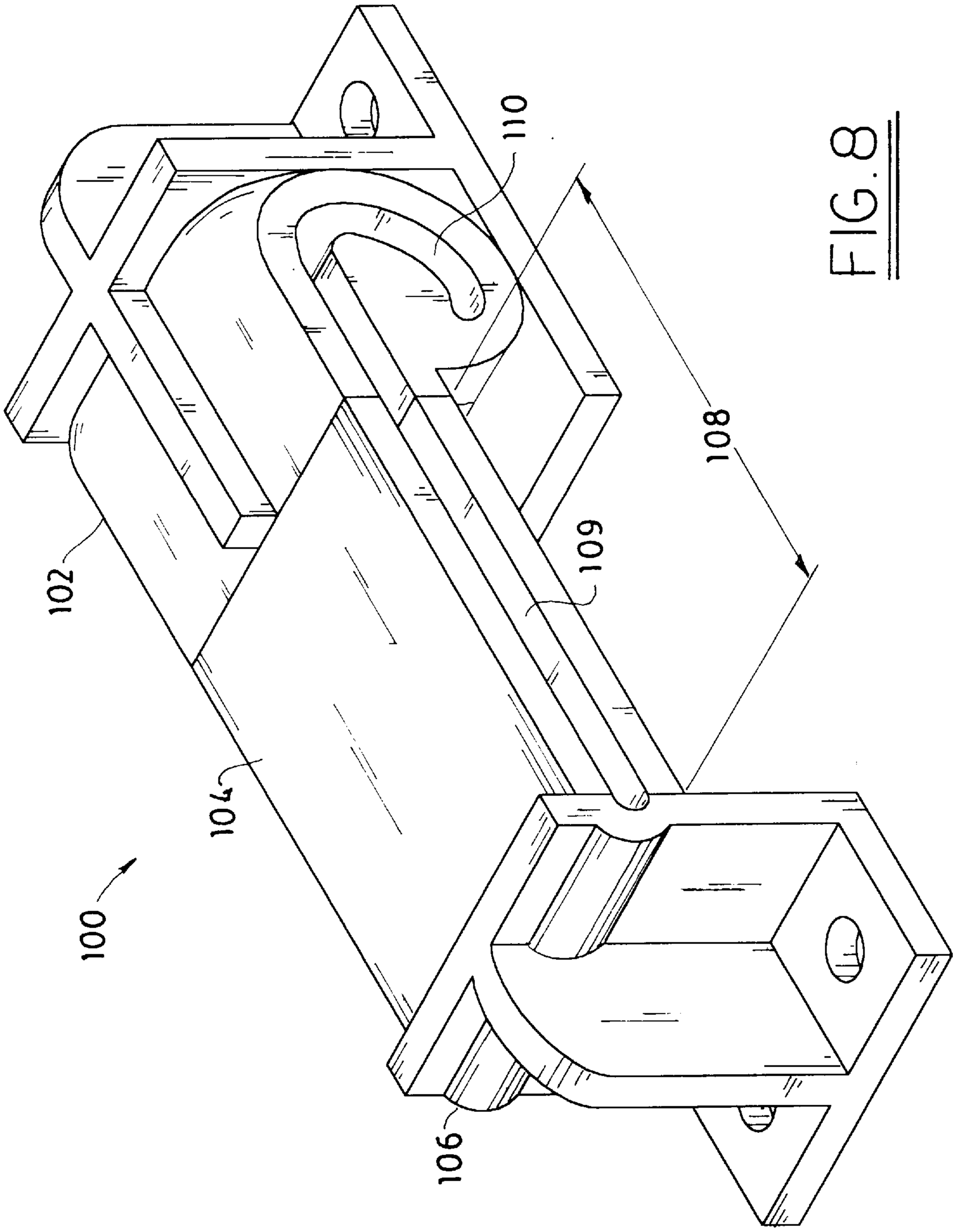


FIG. 8

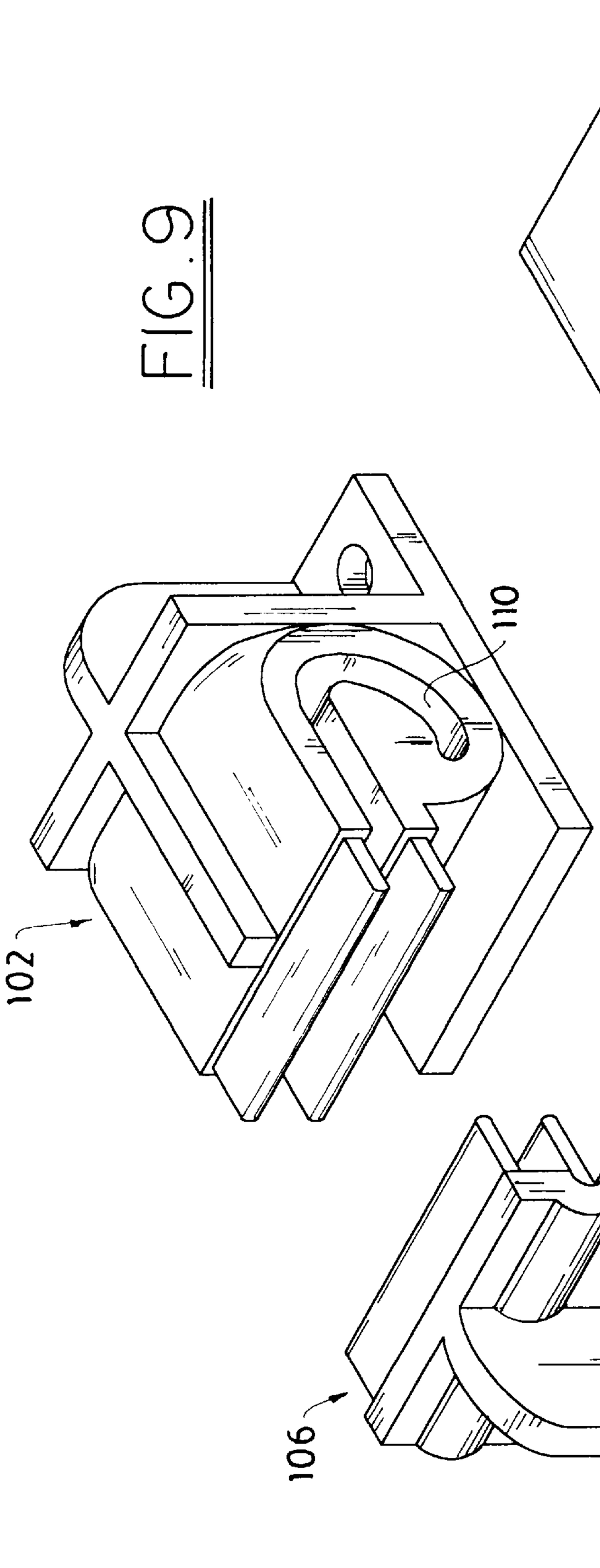


FIG. 9

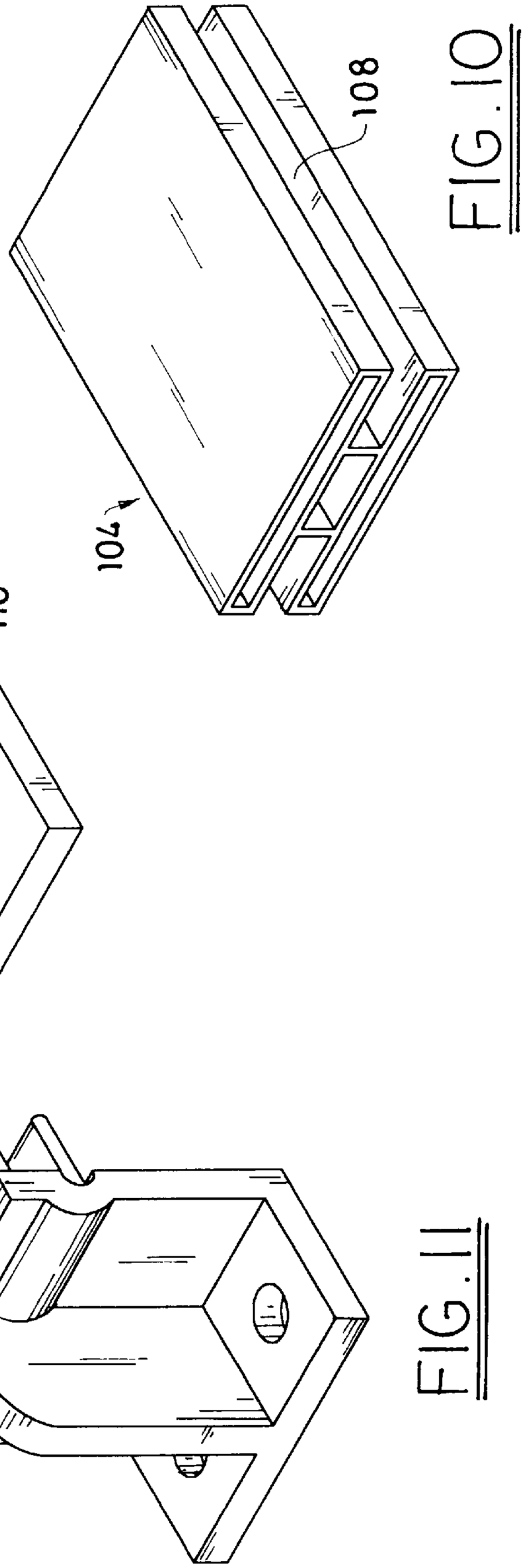


FIG. 10

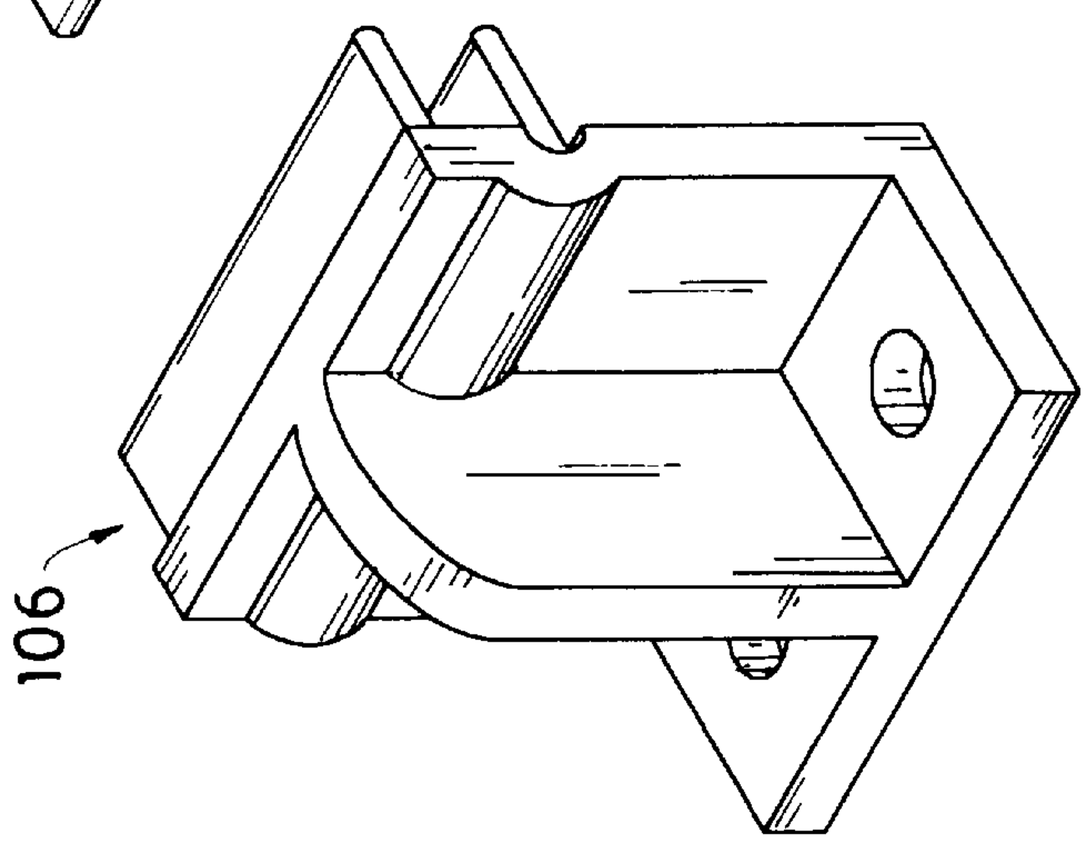
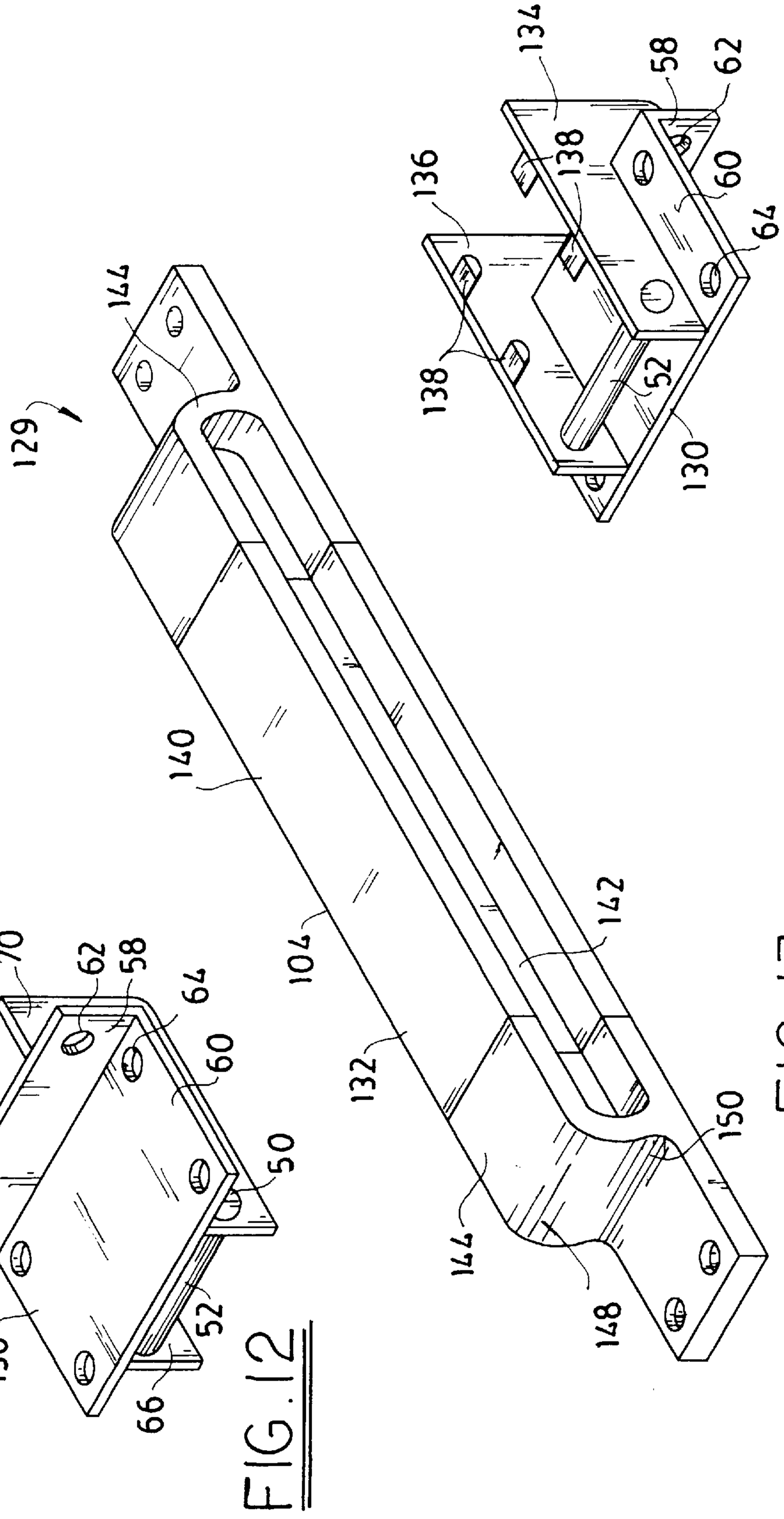


FIG. 11


129
144
140
104
132
142
150
148
146
70
62
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64
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130
134
138
136
FIG. 14
FIG. 13
FIG. 12

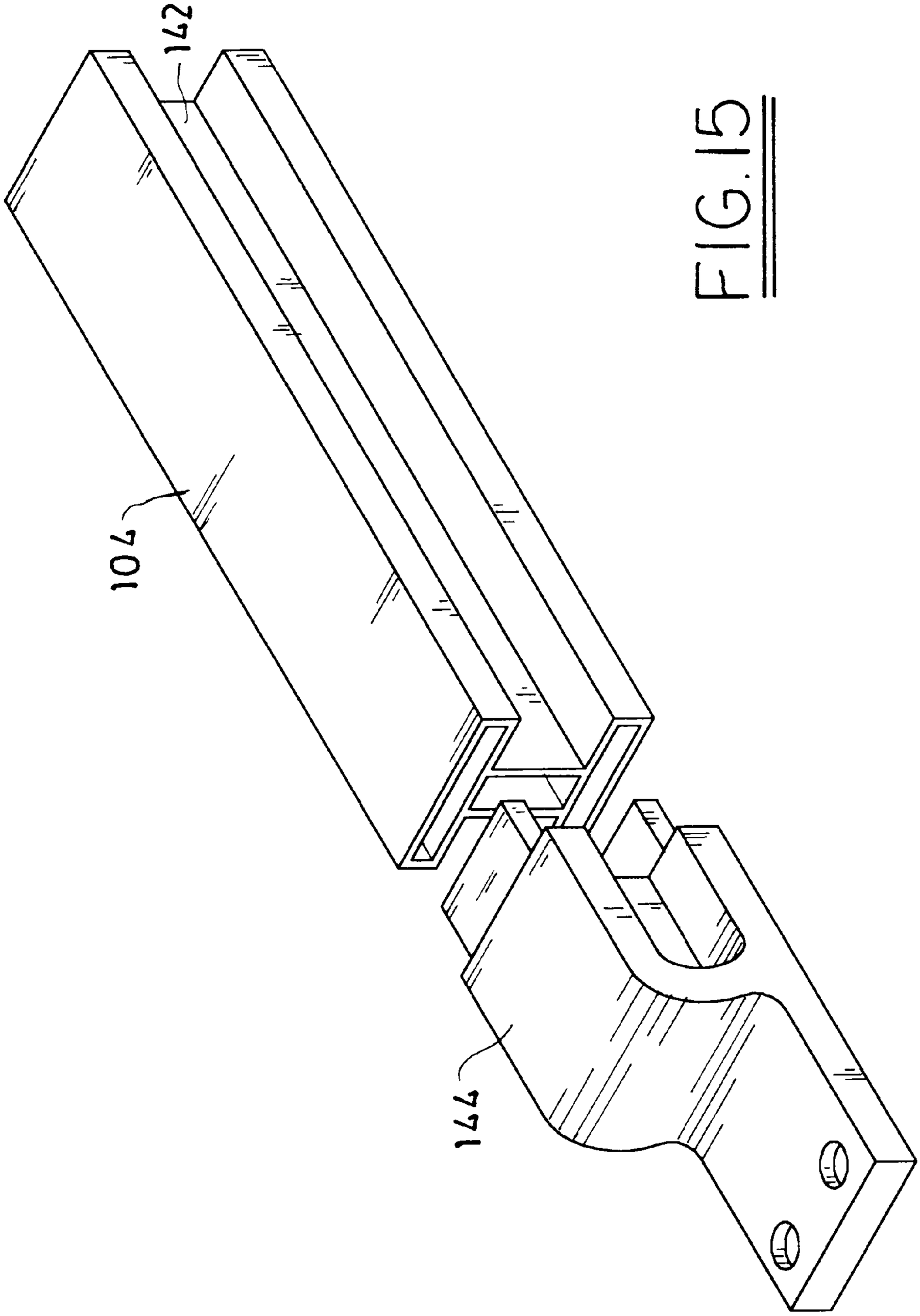

FIG. 15

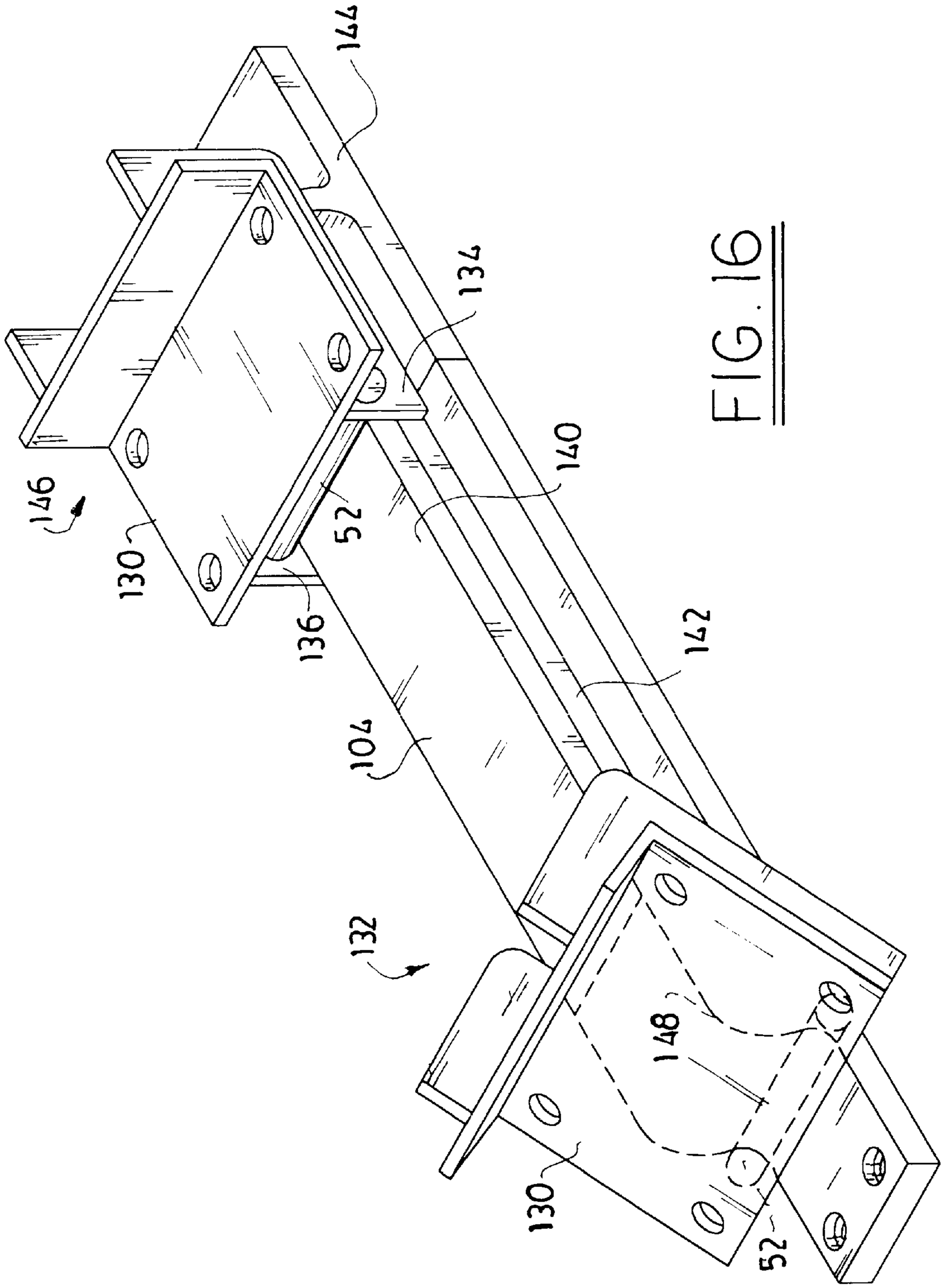

FIG. 16

SUPPORT ASSEMBLY FOR ATTACHING A SIGN

FIELD OF THE INVENTION

A support assembly for attaching a sign to a pallet rack.

BACKGROUND OF THE INVENTION

Merchandise storage systems, such as pallet racks, often contain header sign assemblies which contain signs with advertising messages. These signs are frequently displayed in front of merchandise mounted on the racks and thus often must be moved in order to gain access to the merchandise.

It is an object of this invention to provide a support assembly for attaching a sign to a pallet rack which allows one to readily tilt the sign in order to gain access to merchandise disposed behind it.

SUMMARY OF THE INVENTION

In accordance with this invention, there is provided a support assembly for attaching a sign to a pallet rack. The assembly contains a bracket, means for attaching the bracket to a pallet rack, a support body slidably attached to the bracket, means for raising and lowering the support body with respect to the bracket, means for tilting the support body so that it forms an acute angle with the bracket, and means for locking the support body into a position in which it forms an acute angle with the bracket.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be more fully understood by reference to the following detailed description thereof, when read in conjunction with the attached drawings, wherein like reference numerals refer to like elements, and wherein:

FIG. **1** is a perspective view of a pallet rack with the support assembly of this invention attached to it;

FIG. **2** is a perspective view of one preferred embodiment of the support assembly of this invention in its closed position;

FIG. **3** is a perspective view of one preferred bracket adapted for use with the support assembly of FIG. **2**;

FIG. **4** is a perspective view of the support assembly of FIG. **2** in its open position;

FIGS. **5**, **6**, and **7** illustrate means for disposing a portion of the bracket of FIG. **3** within the slot contained in the support assembly of FIG. **2**;

FIG. **8** is a perspective view of another preferred embodiment of the support assembly of this invention;

FIGS. **9**, **10**, and **11** are perspective views of the left, middle, and right portions of the support assembly of FIG. **8**;

FIGS. **12**, **13**, and **14** are perspective views of a bracket (top view), and support body, and a bracket (bottom view) of another preferred embodiment of the support assembly of this invention;

FIG. **15** is a partial exploded view of the support assembly of FIGS. **12**, **13**, and **14**; and

FIG. **16** is a perspective view showing bracket **130** disposed in two separate positions on the body of the support assembly of FIGS. **12**, **13**, and **14**.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

One preferred embodiment of the support assembly of this invention is illustrated in FIG. **1**. This FIG. **1** is a perspective view of a storage racking system **10** which is comprised of a pallet rack **12** with a header sign assembly **14**.

Merchandise storage systems, such as pallet racks, are well known to those skilled in the art and are described, e.g., in U.S. Pat. No. 5,595,311 (storage rack system), U.S. Pat. Nos. 5,573,125, 5,531,158, 5,524,776, 5,474,412 (flow rack system), U.S. Pat. No. 5,419,444 (push back rack assembly), U.S. Pat. Nos. 5,316,428, 5,285,909, 5,178,288 (push back pallet rack), U.S. Pat. Nos. 5,170,896, 5,170,829 (retractable pallet rack), U.S. Pat. Nos. 4,982,851, 4,915,240, 4,773,546, 4,729,484, 4,618,064, 4,564,134, 4,450,936, 4,291,812, 4,113,110, 4,074,812, 4,068,751, 4,048,059, 3,695,456, 3,625,372, 3,612,290,3,565,264, and the like. The disclosure of each of these United States patents is hereby incorporated by reference into this specification.

Referring again to FIG. **1**, the pallet rack **12** is comprised of a base **16** and standard uprights **18**. The standard uprights preferably have disposed in them a multiplicity of slots to which one can attach standard shelving (not shown).

This type of pallet rack assembly, and its components, are well known to those skilled in the art and are commercially available. Thus, by way of illustration and not limitation, reference may be had to "Catalogue 983, September/December 1998" which was published by the Avenue Industrial Supply Company, Ltd. of 331 Alden Road, Unit 2, Markham, Ontario, Canada L3R 3L4; see, e.g., pages 45–49 of this catalogue.

Referring again to FIG. **1**, and in the preferred embodiment depicted therein, it will be seen that the header sign assembly **14**, in position **22**, is in its closed state. The header sign assembly **14** is comprised of means for raising the sign **24** to expose the stock area **26** disposed behind the sign **24**, and this is shown in FIG. **1** as state **28**. As will be apparent, when sign **24** is in its raised position **28**, it is also lockably tilted forward to allow the removal of stock item **30**.

FIG. **2** is a perspective view one preferred embodiment of a movable support system. Referring to FIG. **2**, it will be seen that this movable support system is comprised of a bracket **36**, a support body **38**, means for slidably connecting bracket **36** to support body **38**, and means for tilting and removably locking bracket **36** within support body **38**. In this preferred embodiment, bracket **36** is comprised of orifices **40**, **42**, and **44** through which two or more fasteners (not shown in FIG. **2**) may be extended. One may use a suitable fastener such as, e.g., a bolt, a pin, etc.

FIG. **3** is a schematic view of another preferred bracket **46** which is comprised of orifices **48** and **50** through which pins **52** and **54** are disposed. As will be apparent to those skilled in the art, such pins **52** and **54** allow one to slidably connect bracket **46** (or similar bracket **36**) within the slot **56** disposed within body support **38** (see FIG. **2**). The bracket **46** also comprises flanges **58** and **60** comprising orifices **62** and **64** for fastening the bracket **46** onto a pallet rack **12** (see FIG. **1**). As will be apparent to those skilled in the art, there are similar flanges **58** and **60**, and similar orifices **62** and **64**, on the left side **66** of the bracket **46**, shown in dotted outline.

Referring again to FIG. **3**, and in the preferred embodiment depicted therein, it will be seen that the top surface **68** of bracket **46** is comprised of upstanding ridges **70** integrally connected to top surface **68**. Without wishing to be bound to any particular theory, applicants believe that these upstanding ridges **70** impart desirable structural rigidity to the bracket **46**.

Referring again to FIG. **3**, it will be seen that bracket **46** has a rear surface **71** which, in this embodiment, can serve as a reference point for the position of the bracket vis-a-vis

support **38**. When the bracket **46** (or the similar bracket **36**) is on the linear portion of slot **56**, its rear surface **71** is generally substantially parallel to slot **56**, preferably forming an angle of from about 0 to about 7 degrees with the support body **38**. When, however, the bracket **46** (or the bracket **36**) is on the curvilinear portion of slot **57**, its rear surface **71** forms an angle of at least about 10 degrees with the support body **38** and, preferably, forms an angle of from about 10 to about 25 degrees with such support body **38**.

Referring again to FIG. **2**, and in the preferred embodiment depicted therein, it will be seen that the support body **38** may be moved in the direction of arrows **72** to raise the body vis-a-vis the bracket **36** and the rack (not shown). The raised position of body **38** corresponds to position **28** depicted in FIG. **1**.

FIG. **2** also illustrates that, in the preferred embodiment depicted, the support body **38** contains means for attaching a sign (not shown). In the embodiment depicted, the support body **38** comprises mounting flanges **74** comprised of orifices **76** which may be used to attach a sign thereto. One may use other means for removably attaching a sign to the device such as, e.g., adhesive means, magnetic means, etc.

Referring again to FIG. **2**, it will be seen that most of the slot **56** is substantially linear and preferably has a substantially uniform width. However, the bottom portion **78** of the slot **56** undergoes a transition between the linear segment **80** of slot **56** and the curvilinear section **82** of slot **56**.

The effect of raising the support body **38** so that the bracket **36** is disposed in both the linear portion **80** of slot **56** and the curvilinear portion **82** of slot **56** is illustrated in FIG. **4**. Because the curvilinear portion **82** has a constantly changing slope, when the bracket **36** is pushed to the limit of its travel **84** within segment **82** (see FIG. **2**), it will necessarily be disposed at a different angle **86** vis-a-vis the support body **38** than it is when it is in the position depicted in FIG. **2**; thus, the support body will be forced to tilt forwardly, in the direction of arrow **88**, vis-a-vis the bracket **36** and the rack (not shown) to which it is affixed. Furthermore, the support body will be removably locked in a tilted position.

FIGS. **5**, **6**, and **7** illustrate how the bracket **36** may be slidably attached to support **38** within slot **56**. As is apparent to such Figures, the orifices **40**, **42**, and **44** are aligned with slot **56** and suitable fasteners (not shown) are then inserted through such orifices and such slot.

FIG. **8** is a perspective view of another preferred support **100** which is comprised of a slotted base **102**, a slotted section **104** removably attached to base **102**, and a top section **106** removably attached to center section **104**. As will be apparent, as the length **108** of center section **106** is varied, the overall length of support assembly **100** may be varied to accommodate signs of different sizes.

The length of center section **104** may be varied by conventional means. Thus, by way of illustration, center section **104** may be provided as an extruded plastic piece which may be cut to size. Alternatively, or additionally, center section **104** may be provided with male and female connectors at its ends to join to other similarly configured center sections.

Referring again to FIG. **8**, it will be seen that center section **104** is comprised of a substantially linear slot **109**, and base section **102** is comprised of a substantially curvilinear slot **110**. Thus, the device of this FIG. **8** operates in substantially the same manner as the device of FIGS. **1–7** and differs therefrom only in that it contains separable sections.

FIGS. **9**, **10**, and **11** are perspective views of the base **102**, center section **104**, and top section **106** depicted in FIG. **8**.

FIGS. **12**, **13**, and **14** illustrate another preferred support system **129** of the invention which is substantially lighter, less expensive to make, and more rigid than the devices described in FIGS. **1–11**. Referring to these Figures, it will be seen that bracket **130** is similar to the bracket **46** illustrated in FIG. **3**, with the exception that it utilizes a different means for sliding upon support **132**. Referring to FIG. **12**, which is a bottom view of bracket **130**, it will be seen that flanges **134** and **136** are preferably integrally connected to both pin **52** and inwardly-extending guide pins **138**. As will be apparent, the pin **52** rides upon the top surface **140** of support **132**, and the guiding pins **138** ride within slot **142** of support **132**.

The support **132** preferably is comprised of a center piece **104**, an end piece **142**, and an end piece **144**. These pieces are removably attached to each other and, when they are disassembled, the pins **52** and **138** can be positioned on center piece **104** prior to reassembly.

The center piece **104**, the end piece **142**, and the end piece **144** may be removably attached to each other by conventional means FIG. **15** illustrates one such means of attachment.

FIG. **16** illustrates how the bracket **130** rides upon support **132**. In the position **146**, the pin **52** is substantially contiguous with the top surface **140** of support **132**, the pins **138** are disposed within slot **142**, and the bracket **130** is substantially parallel to the top surface **140**. However, as the bracket approaches the curved surface **148**, pin **52** travels downwardly until it contacts partial recess **150** (see FIG. **13**), thereby stopping the motion of bracket **130**, tilting such bracket upwardly, and locking such bracket within recess **150**.

It is to be understood that the aforementioned description is illustrative only and that changes can be made in the apparatus, in the ingredients and their proportions, and in the sequence of combinations and process steps, as well as in other aspects of the invention discussed herein, without departing from the scope of the invention as defined in the following claims.

We claim:

1. A support assembly for attaching a sign to a pallet rack, wherein said support assembly is comprised of a bracket, a support body slidably connected to said bracket, means for connecting a sign to said support body, means for raising said support body with respect to said bracket, means for lowering said support body with respect to said bracket, means for moving said support body so that it forms an acute angle with said bracket, and means for removably locking said support body into a position into which it forms said acute angle with said bracket.

2. The support assembly as recited in claim **1**, wherein said support body is comprised of a slot disposed within said support body.

3. The support assembly as recited in claim **2**, wherein said support body is comprised of a center section and a first end section removably attached to each other.

4. The support assembly as recited in claim **3**, wherein said support body is further comprised of a second end section removably attached to said center section.

5. The support assembly as recited in claim **4**, wherein said center section is comprised of a slot extending substantially the entire length of said center section.

6. The support assembly as recited in claim **5**, wherein said center section is comprised of a top surface which is substantially parallel to said slot.

7. The support assembly as recited in claim **6**, wherein said center section is comprised of a bottom surface which is substantially parallel to said slot.

8. The support assembly as recited in claim **7**, wherein said first end section is comprised of a slot.

9. The support assembly as recited in claim **8**, wherein said second end section is comprised of a slot.

10. The support assembly as recited in claim **9**, wherein said first end section is comprised of a curvilinear recess.

11. The support assembly as recited in claim **10**, wherein said bracket is comprised of a rod.

12. A merchandise storage system comprised of a pallet rack attached to a support assembly, wherein said support assembly is comprised of a bracket, a support body slidably connected to said bracket, means for connecting a sign to said support body, means for raising said support body with respect to said bracket, means for lowering said support body with respect to said bracket, means for moving said support body so that it forms an acute angle with said bracket, and means for removably locking said support body into a position into which it forms said acute angle with said bracket.

13. The merchandise storage system as recited in claim **12**, wherein said support body is comprised of a slot disposed within said support body.

14. The merchandise storage system as recited in claim **13**, wherein said support body is comprised of a center section and a first end section removably attached to each other.

15. The merchandise storage system as recited in claim **14**, wherein said support body is further comprised of a second end section removably attached to said center section.

16. A merchandise storage system comprised of a pallet rack, a support assembly attached to said pallet rack, and a sign attached to said support assembly, wherein said support assembly is comprised of a bracket, a support body slidably connected to said bracket, means for connecting a sign to said support body, means for raising said support body with respect to said bracket, means for lowering said support body with respect to said bracket, means for moving said support body so that it forms an acute angle with said bracket, and means for removably locking said support body into a position into which it forms said acute angle with said bracket.

17. The merchandise storage system as recited in claim **16**, wherein said support body is comprised of a slot disposed within said support body.

18. The merchandise storage system as recited in claim **17**, wherein said support body is comprised of a center section and a first end section removably attached to each other.

19. The merchandise storage system as recited in claim **18**, wherein said support body is further comprised of a second end section removably attached to said center section.

* * * * *